

ABSTRACT OF THE DISCLOSURE

A method of manufacturing an optical fiber and related devices using an apparatus having an elongated microwave guide coupled to a resonant cavity formed of an outer cylindrical wall and inner cylindrical wall having a slit with a width W and configured to deliver microwave energy having a vacuum wavelength λ to a resonant cavity thereof to satisfy the relationship: $W \leq \lambda/10$ where a substrate tube is located within the resonant cavity and plasma chemical vapor deposition deposits layers of doped silica thereon followed by thermal collapsing the substrate and drawing an optical fiber therefrom.